Exploring Perceptions and Preventive Practices Related to COVID-19 Among General Public: A Cross Sectional Analytical Study from Pakistan

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ABSTRACT

Objective: This research was done to assess the level of public awareness, perceptions and practices using a survey questionnaire of COVID-19 in Pakistan.

Study Design: Cross-sectional analytical study.

Place and Duration of Study: Study was carried out from the Nov 2021 to Apr 2022 through online survey in Pakistan

Methodology: The sample size calculated with open epi sample size calculator was 345. Convenient sampling technique was used. Individuals who consented and between 15 and 80 years of age were included. The questionnaire included Sociodemographic information and questions on respondents' perceptions and preventive practices regarding COVID-19, including particular inquiries about widespread misconceptions.

Results: Mean age of the participants was 31±13 years. Proportions of males 159(46%) and females 186(54%) were almost equal, Majority 124(36%) were of age group 21-30 years. Half 172(50%) were graduates and 163(47%) came to knew about COVID-19 from social media Significant association between gender and source of information (p=.008) knowledge of specific cure p=0.040, maintaining social distancing p=0.002), wearing masks in public p=0.003, sanitize personal items (p=0.034) Significant association was found between age categories and source of information p<0.05 , received COVID-19 vaccine p=0.021, avoid overcrowding to prevent infection p<0.05Significant association was found between education and knowledge of specific cure p=0.001, wearing mask in public p=0.02, following government restrictions p=0.015

Conclusion: Better knowledge influences attitudes and behaviors in favor of COVID-19 prevention measures. Enhancing public knowledge, positive attitudes, appropriate behaviors, and risk perception during epidemics are necessary for disease control. **Keywords:** Attitude, Awareness, COVID-19, Knowledge, Perceptions, Practices, Prevention.

INTRODUCTION

Globally, at the time of writing, there have been 608,328,548 confirmed cases of COVID-19 reported to the World Health Organization (WHO), including 6,501,469 deaths.[1] The global pandemic has created previously unheard-of difficulties everywhere.[1] Pakistan became part of pandemic when On February 26, 2020, reported the first 7 cases of the COVID-19 epidemic Karachi. As of Sept 19, 2022 Pakistan reported 1,571,894 confirmed cases of COVID-19 and 30,607 deaths. (website) Without a doubt, the COVID-19 pandemic poses a historically significant threat to both public health and the global economy.[2] 29 million people have died and 15 million have been infected as a result of the spontaneous generation coronavirus disease 2019, which has had a negative impact on people's lives all over the world. Despite being the world's 5th most populous country, Pakistan only has so far recorded the world's 29th highest death toll and

29th highest number of confirmed cases,[3] with limited healthcare resources in hand, the country needed to take quick, adequate steps to decrease the spread of the virus and the chances of a number of possible casualties. Due to high transmissibility of virus limiting the close contacts became the principle step. The fast development of coronavirus disease has called for people to acquire health information and to apply it, adapting their behavior at a fast pace.[4]

All individuals infected with SARS Cov-2 may not show the clinical manifestations of the disease. Most of the people develop mild symptoms. As a result, it is crucial that the general public is aware of the signs and symptoms, the contributing factors to the disease, and the preventive measures that must be taken, such as social withdrawal, proper hand hygiene, and the use of face masks.[5] To reduce the transmission of SARS-Cov-2, preventive strategies are feasible and the best option in resource- limited settings 65(8). It is crucial to keep virus transmission rates as low as feasible in order to ease the strain on the healthcare

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system.[6] Government of Pakistan has implemented a range of strategies to raise public awareness because it is a developing nation with limited resources. has made a significant contribution to the development and implementation of protocols for the prevention and transmission of COVID-19 as well as the public awareness campaigns.[7] However, the eventual result depends on people's adherence to preventive measures, which is closely related to their comprehension and awareness of the condition. Therefore, this research was done to assess the level of public awareness, perceptions and practices using a survey questionnaire of COVID-19 in Pakistan

METHODOLOGY

A cross-sectional analytical study of the study participants in Pakistan was carried out from the November 2021 to April 12, 2022. An online survey generated on Google Forms Inc. was sent to accessible contacts via social media using a convenient sampling technique. According to a research conducted in Karachi Pakistan, the sample size was computed using openepi sample size calculator with anticipated proportion of 70.4%. The overall sample size was 345, with a confidence interval of 95% and an absolute precision of 5%.[8] Ethical approval was taken from the ethical Review board Army Medical College, NUMS (ERC/ID/24)

Inclusion Criteria: Individuals with access to cell phones and internet and residents of Pakistan were included.

Exclusion Criteria: was ages below 16 and above 80 years as they are unable to comprehend.

Before starting to fill out the form, consent was obtained. The questionnaire included Sociodemographic information and questions on respondents' perceptions and preventive practices regarding COVID-19, including particular inquiries about widespread misconceptions. Data were entered into SPSS-22. For categorical variables, frequencies and percentages were computed. Additionally, chi-square and t-test were also applied to calculate the statistical significance between the qualitative variables. The *p*-value ≤0.05 was taken as statistically significant

RESULTS

A total of 345 people completed the survey questionnaire. Mean age of study participants was 31±13 years with lowest age 18 years and highest 80 years. Proportions of males 159(46%) and females 186(54%) were almost equal, majority 124(36%) were of

age Group 21-30 years. Half 172(50%) were graduates and 163(47%) had came to knew about COVID-19 from social media Sociodemographic characteristics are shown in Table-I.

Table-I: Sociodemographic characteristics of study participants

Variable	(n)	(%)
Gender		
Male	159	46.1
Female	186	53.9
Education		
Intermediate	84	24
Graduate	172	50
Postgraduate	89	26
Age Category		
Less than 21 years	97	28.1
21-30 years	124	35.9
31-40 years	41	11.9
41-50 years	35	10.1
More than 50 years	48	13.9
Any Medical Illness		
Diabetic	12	3.5
Hypertension	12	3.5
Hypercholesterolemia	4	1.2
Renal Disease	1	.3
Heart disease	7	2.0
No disease	309	90
Source of Information		
Social media (Facebook, WhatsApp)	118	34
Mass Media (TV, Radio, internet)	163	47
Health Care workers	33	10
Family, Friends, neighbor	26	8
Others	5	1
Received Vaccine		
Yes	280	81
No	65	189

Responding to questions regarding awareness of participants about COVID-19 infection, almost half quoted mass media 163(47%) as major source of information and more than one fourth information from social media 118(34%). Almost two third 202(59%) aware of cases in friends and family Regarding minimum safe distance, almost half 167(48%) replied 1-2 meters whereas almost one third 109(32%) replied 2-3 meters. Major proportion 249(72%) correctly replied that that there was no specific cure while participants strongly agreed 134(39%) that applying face mask help prevent COVID-19, 68(20) disagreed. More than one third 126(37%) strongly agreed that physical distancing help to prevent COVID-19. Almost one fourth, agreed 86(25%) that the hand washing with soap and water, use of hand sanitizer prevent COVID-19 to almost one third of participants staying at home 103(30%) prevent

COVID-19 and the self-quarantine 127(37%) of suspected people aids prevention of COVID-19.

In response to questions regarding practices of participants almost a quarter participants 79(23) very often shake hands, 88(26%) always wash/sanitize hands with soap and water/alcohol based sanitizer. One third 117(34%) always cover their faces with handkerchief/bent elbow a quarter 88(26%) often attended social gatherings in last two months. A small number of participants always 46(13%) kept minimum safe distance in public places More than one third 129 (38%) always wore mask while going out of home Responses are shown in Figure-1.
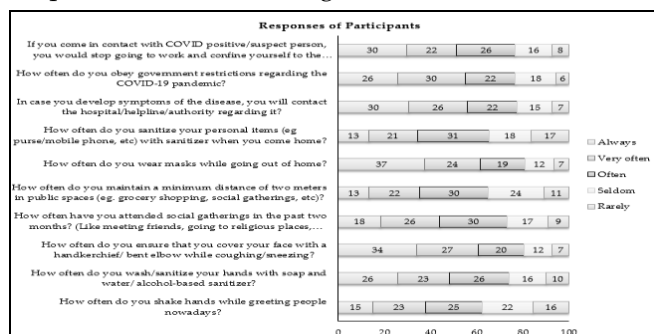

Figure-1: Responses of Participants

Chi square test revealed significant association between gender and source of information (p=0.008) majority of the participants received information from social media 118 and mass media 163, kmowledge of specific cure p=0.040, shaking hands while greeting people p<0.05,washing ans sanitizing hands p=0.028, attending social gatherings (p=0.001), keep minimum safe distance of 2 meters p=0.002), wearing masks in public p=0.003, sanitsing personal items (p=0.034).

Significant association was found between age categories and source of information p<0.05 , received COVID -19 vaccine p=0.021, knowledge of suspected or confirmed cases in vicinity(p=0.001), face mask perceived as mandatory to prevent infection p<0.00, avoid overcrowding to prevent infection p<0.05, washing & sanitizing hands prevent infection p<0.05, self quarantine of suspected cases prevent infection p<0.05. Significant association was also found between practices of participants regarding COVID-19 as shown in Table-II.

Significant association was found between education and knowledge of suspected or confirmed cases in vicinity p=0.043, specific cure p=0.001 , wering face masks prevent COVID-10 p=0.04. Wearing mask in public p=0.02, following government restrictions p=0.015.

Table-II: Association between practices of participants regarding COVID-19

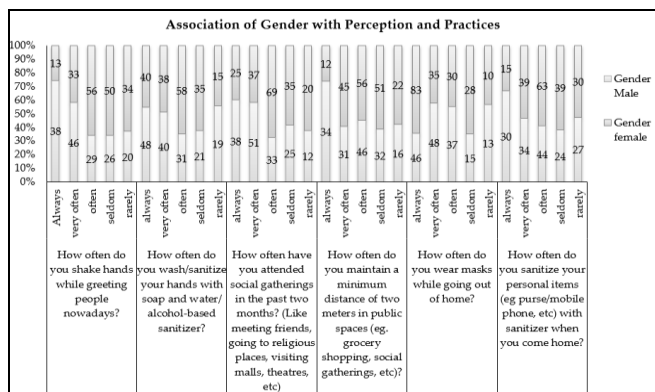| Question	Age Cat (years)					p-value
	<21	21-30	31-40	41-50	>50	
Shake hands while greeting people nowadays?						
Always	15	28	3	2	3	
Very Often	23	29	5	4	18	
Often	26	27	14	11	7	.008
Seldom	21	20	14	11	10	
Rarely	12	20	5	7	10	
Wash/sanitize your hands with soap and water/ alcohol-based sanitizer						
Always	27	43	7	6	5	
Very often	31	30	3	6	8	
Often	21	32	13	12	11	<0.05
Seldom	10	14	11	6	15	
Rarely	8	5	7	5	9	
Cover face with a handkerchief/ bent elbow while coughing/sneezing						
Always	40	58	9	5	5	
Very often	32	28	10	9	13	
Often	15	21	14	11	8	<0.05
Seldom	6	8	7	5	16	
Rarely	4	9	1	5	6	
Attended social gatherings in the past two months						
Always	23	28	3	4	5	
Very often	26	36	6	11	9	
Often	28	34	19	6	15	.016
Seldom	13	14	10	11	12	
Rarely	7	12	3	3	7	
Maintain a minimum distance in public spaces						
Always	10	30	4	1	1	
Very often	21	23	10	9	13	
Often	29	36	11	15	11	.016
Seldom	25	23	13	7	15	
Rarely	12	12	3	3	8	
Wear masks while going out of home						
Always	56	51	9	6	7	
Very often	15	39	5	10	14	
Often	16	23	11	7	10	<0.05
Seldom	6	4	12	10	11	
Rarely	4	7	4	2	6	
Sanitize your personal items						
Always	13	26	4	2	0	
Very often	22	22	9	8	12	
Often	31	33	16	12	15	.044
Seldom	12	20	10	8	13	
Rarely	19	23	2	5	8	
Contact the hospital/helpline/authority if develop symptoms						
Always	38	49	8	4	6	
Very often	29	30	7	7	15	
Often	14	27	12	9	13	<0.05
Seldom	4	13	11	11	13	
Rarely	12	5	3	4	1	
Obey government restrictions in COVID-19 pandemic						
Always	24	43	8	6	7	
Very often	36	33	9	11	13	
Often	20	28	11	5	11	
Seldom	12	15	12	9	13	.039
Rarely	5	5	1	4	4	
Rarely	7	8	2	2	7	

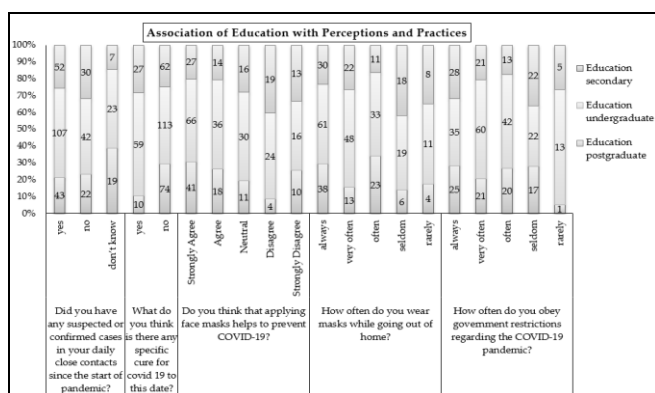**Figure-2: Association of Gender with Perception and Practices**

Figure-3: Association of Education with Perceptions and Practices

DISCUSSION

This study offers significant information regarding awareness, perception and the how well the followed preventive measures in 345 individuals, from Rawalpindi Pakistan. Proportions of males 159(46%) and females 186(54%) were almost equal ,majority 124 (36%) were of age Group 21-30 years. Half 172(50%) were graduates and 163(47%) had came to knew about COVID-19 from social media which is in line with study from India.[9] The majority of participants had a fair awareness regarding COVID-19 disease, minimum safe distance, cure od COVID-19 and cases in the vicinity.[10] contrast to Geltzer, *et al.* study's our study participants were more knowledgeable of the COVID-19 pandemic, which can be related to the fact that the majority of them were graduates and postgraduates. can be linked to the participants in our study having a good education level,[11] The participants were were aware and showed positive attitude about preventive practises, such as hand washing, mask use, social distance, and preventive measures which A study carried out by Abdallah, *et al.* among respondents in three Middle Eastern countries reported a lesser awareness of COVID-19 as compared to results of our study.[12]

Additionally, the attitudes of the students were indicative of the appropriate techniques for prevention of COVID-19 infection, such as hand washing and disinfecting of surfaces and objects., keeping social distancing, wearing face masks in public. Similar to study from Portugal.[13] Comparable to the study conducted in Saudi Arabia, this study had a greater perception of the effectiveness of preventative measures and their adoption than the study as the experience with SARS and MERS infections in Saudi Arabia and Hong Kong may have contributed to this in the past.[14] Interviewees believed that avoiding social situations, remaining at home, using alcohol-based hand sanitizer or soap and water to wash their hands, donning a facemask, and using Dettol disinfectant spray were all effective prophylactic strategies.[15]

A web-based survey conducted in India indicated that although HCPs had favourable attitudes of COVID-19 prevention and control, they were poorly informed about COVID-19 transmission and symptom onset.[16] Participants' support of government measures to combat the COVID-19 pandemic is generally very high which is in agreement with evidence from Palestine.[17] The main indicators of COVID-19 preventative measures and positive attitude was awareness of vulnerabily toward COVID-19 infection.[18]

Our study's findings revealed that more than half of the participants kept a safe distance, used face masks, and washed their hands, which is consistent with evidence from,[19] Despite the fact that the majority of individuals behave in a socially responsible manner. It is crucial that the general public, specially the elderly, is aware of and knowledgeable about COVID-19.[20] The most often practiced preventive measures were said to be those adopted in in crowds and social gatherings. while guarding others included covering one's mouth and nose instead of putting a mask when sneezing or coughing Another cross-sectional study that evaluated the Saudi Arabian population's found high levels of trust reported that this may reflect trust in the government,[21] Self-quarantine (94.5%) and remaining at home (90.5%) were the key preventive methods considered to be more successful in averting the COVID-19 pandemic than the other cautious behaviours in the current study. It went against a Korean study, though, which claimed that using face masks and practicing good hand cleanliness were thought to be more effective precautions.[22]

According to a survey done in China, more than 91% of the population follows key preventive measures like staying indoors, donning masks, and avoiding crowds. These findings prompt the relevant Indian authorities to use its think tank to devise and implement creative awareness-raising tactics,[23] most of the study's participants, who were mostly younger age groups, accurately compared the COVID-19 a epidemiological and clinical elements to evidence from China.[24] Education was thought to be directly related to increased PM compliance in our study. Few respondents thought that people with less education had a higher prevalence of COVID-19 than people with greater education. According to them, better COVID-19 compliance was directly related to greater education.[25] In order to fully comprehend and capture how people interpret and make sense of this health dimension, this result would benefit from a qualitative study that would supplement this quantitative work.

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LIMITATIONS OF STUDY

As an online survey was used to distribute the questionnaire, the research was limited to only those people who could read and English language writing. The majority of the replies we got came from the educated side of the members of society with internet access, therefore perspectives of the less educated and uneducated were left out.

RECOMMENDATION

Based on results of present study, both national as well as international organization must collaborate with health promoting institutes to implement better personal precautionary measures to ensure safer community.

CONCLUSION

Better knowledge influences attitudes and behaviors in favor of COVID 19 prevention measures. Enhancing public knowledge, positive attitudes, appropriate behaviors, and risk perception during epidemics are necessary for disease control.

Conflict of Interest: None.

Author's Contribution

Following authors have made substantial contributions to the manuscript as under:

NAT: Conception, Design, Write up, Review of manuscript & approval for the final version to be published.

BASA: Analysis and interpretation, Write up, Review of manuscript & approval for the final version to be published.

MR: Data Collection and Entry methodology & approval for the final version to be published.

SM: Data colllection, Entry analysis & approval for the final version to be published.

HY: Data collection and Entry referencing, Analysis & approval for the final version to be published.

MT: Data collection and Entry analysis, Interpretation & approval for the final version to be published.

SS: Data collection and Entry referencing & approval for the final version to be published.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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